

[54] STACKABLE AND NESTABLE CONTAINER

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[56] IReferences Cited

UNITED STATES PATENTS

3,581,932	6/1971	Kreeger.....	211/126
3,013,692	12/1961	Chesley.....	220/97 D
2,462,693	2/1949	Wabshaw.....	220/97 E
2,513,693	4/1950	Turbyfill.....	220/97 E X
3,403,808	10/1968	Armstrong.....	220/23.6

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[57] ABSTRACT

A stackable and nestable container of molded construction including a generally horizontally extending rigid peripheral structure having a plurality of sides defining an open top area of fixed dimensions, a plu-

rality of side walls fixed at their upper end portions with respective sides of the peripheral structure and a bottom structure connected with the lower end portions of the side walls between a stacking position wherein the side walls extend vertically downwardly from the peripheral structure so that a plurality of like containers can be stacked one on top of the other during transportation when filled and a nesting position wherein the side walls extend downwardly and inwardly from the peripheral structure so that a plurality of like containers can be nested one within the other during storage and transportation when empty. The bottom, side and top structures of the container when in the stacking position define a containing space of generally rectangular configuration in plan bounded by two parallel ends and two parallel sides of a length approximately twice the length of the ends, the upper and lower surfaces on the container having three sets of upper and lower stacking elements permitting the container to be mounted in vertically stacked relation with a container disposed thereabove or therebelow in any of the following formations: (1) with the sides and ends thereof in vertical alignment with the sides and ends of the other container, irrespective of end-to-end orientation and adjacent upper and lower stacking elements interengaged or, (2) with either half of said container vertically aligned with either half of a vertically adjacent container and the other half of said container extending horizontally outwardly from said vertically adjacent container beyond either end thereof or either half of either side thereof and with the adjacent upper and lower stacking elements interengaged.

12 Claims, 9 Drawing Figures

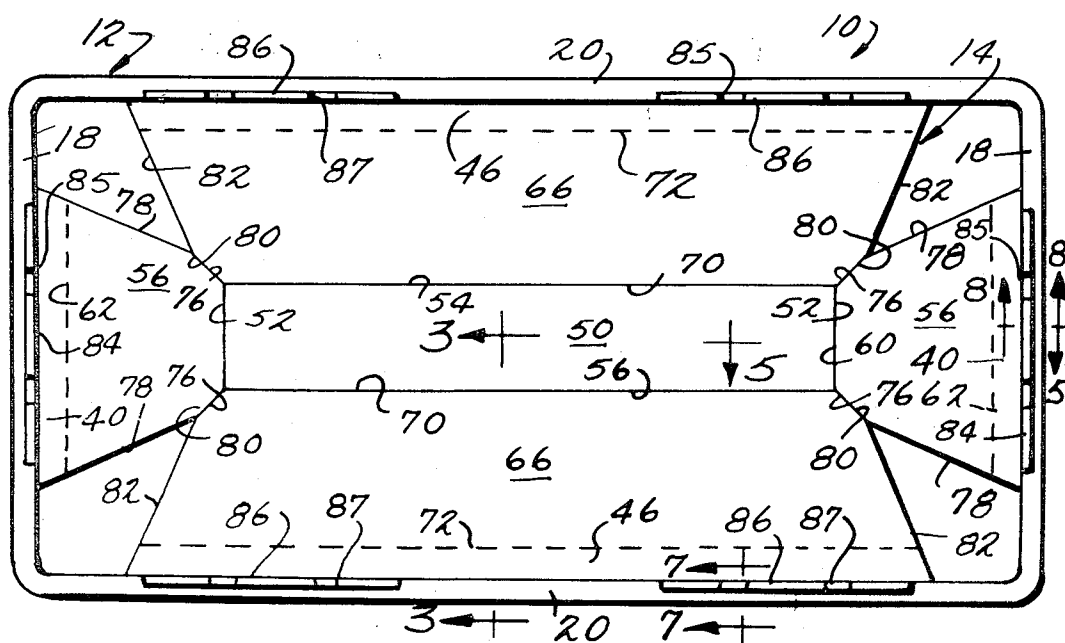
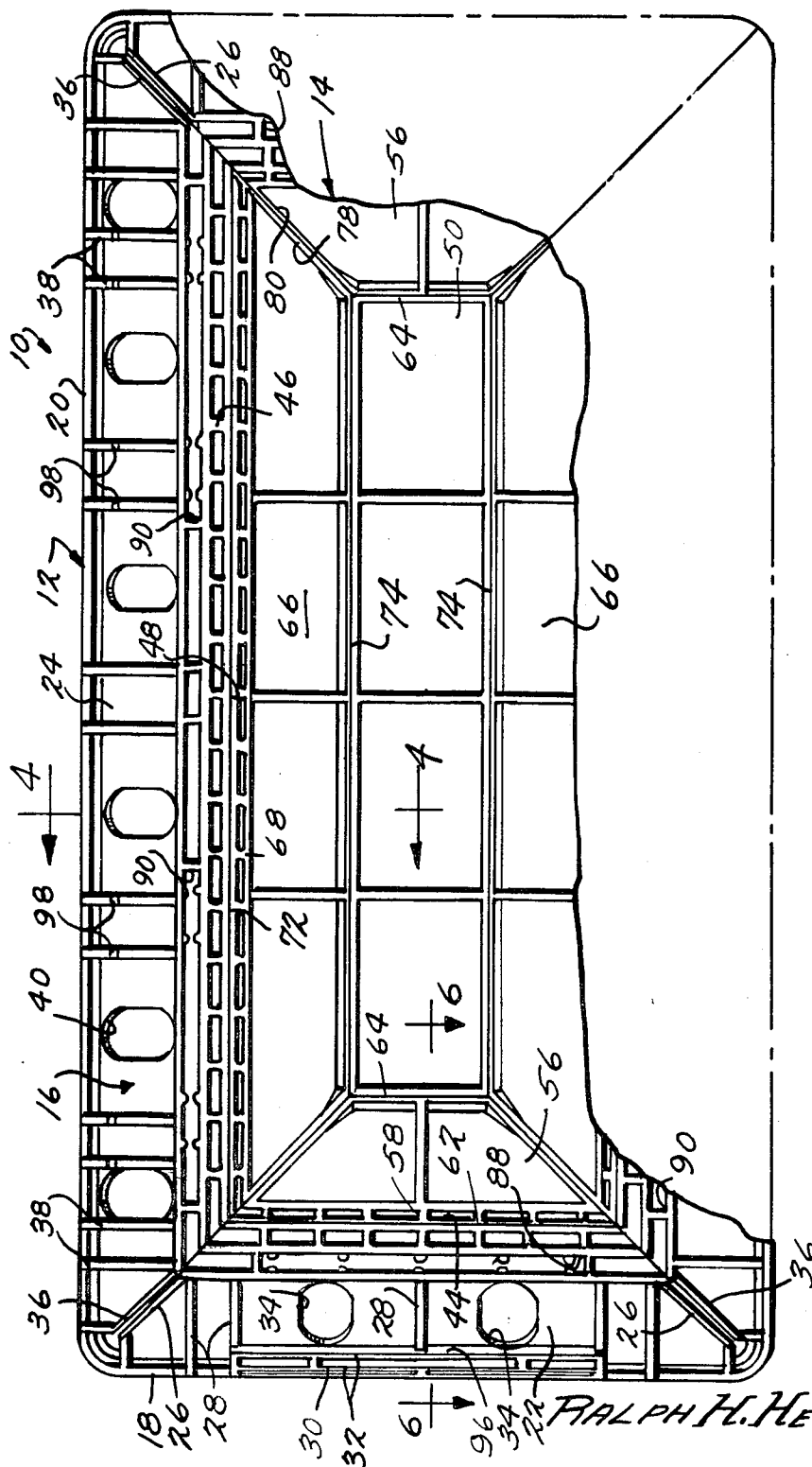


Fig. 2.



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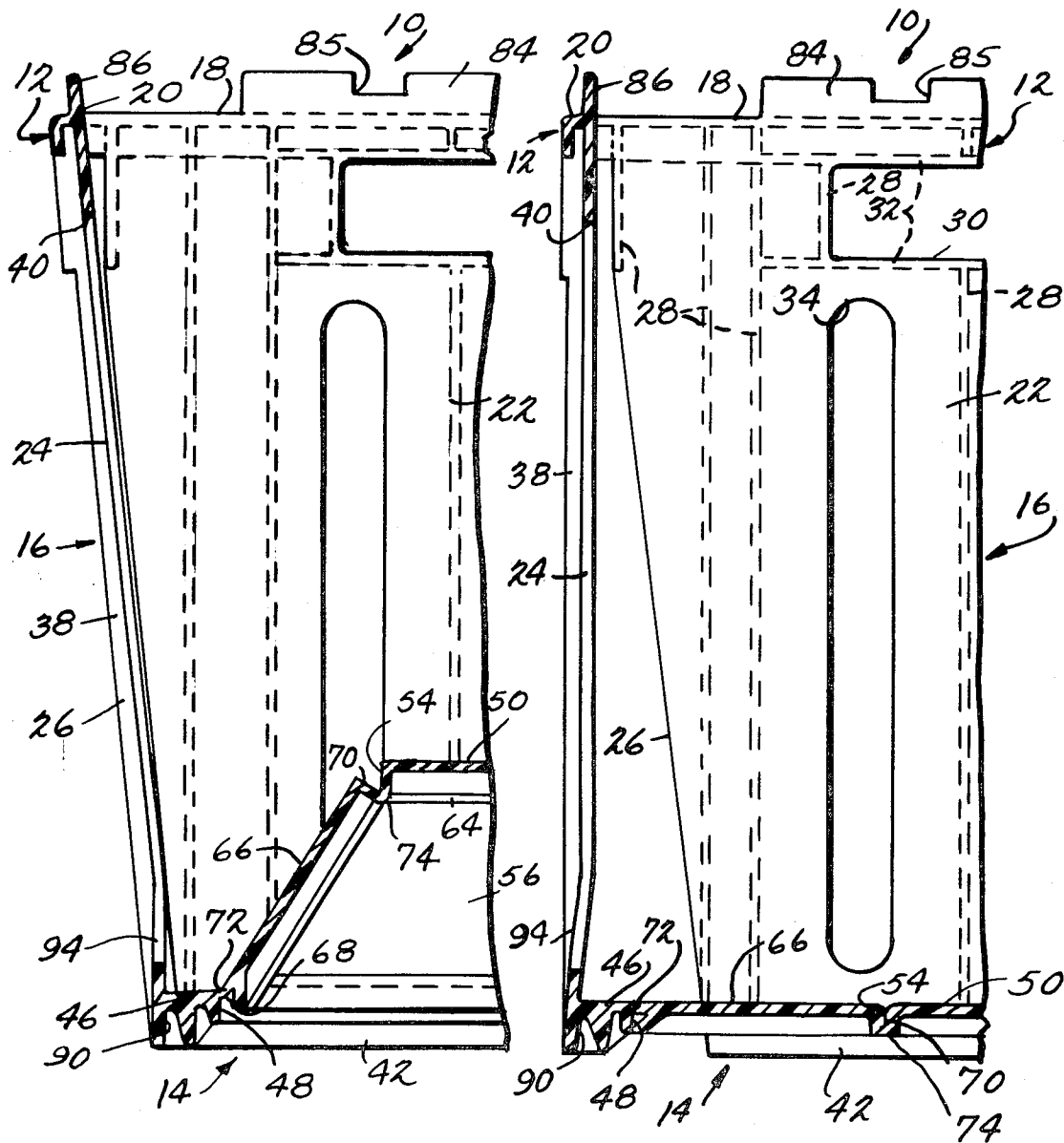
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Fig. 4.

Fig. 3.



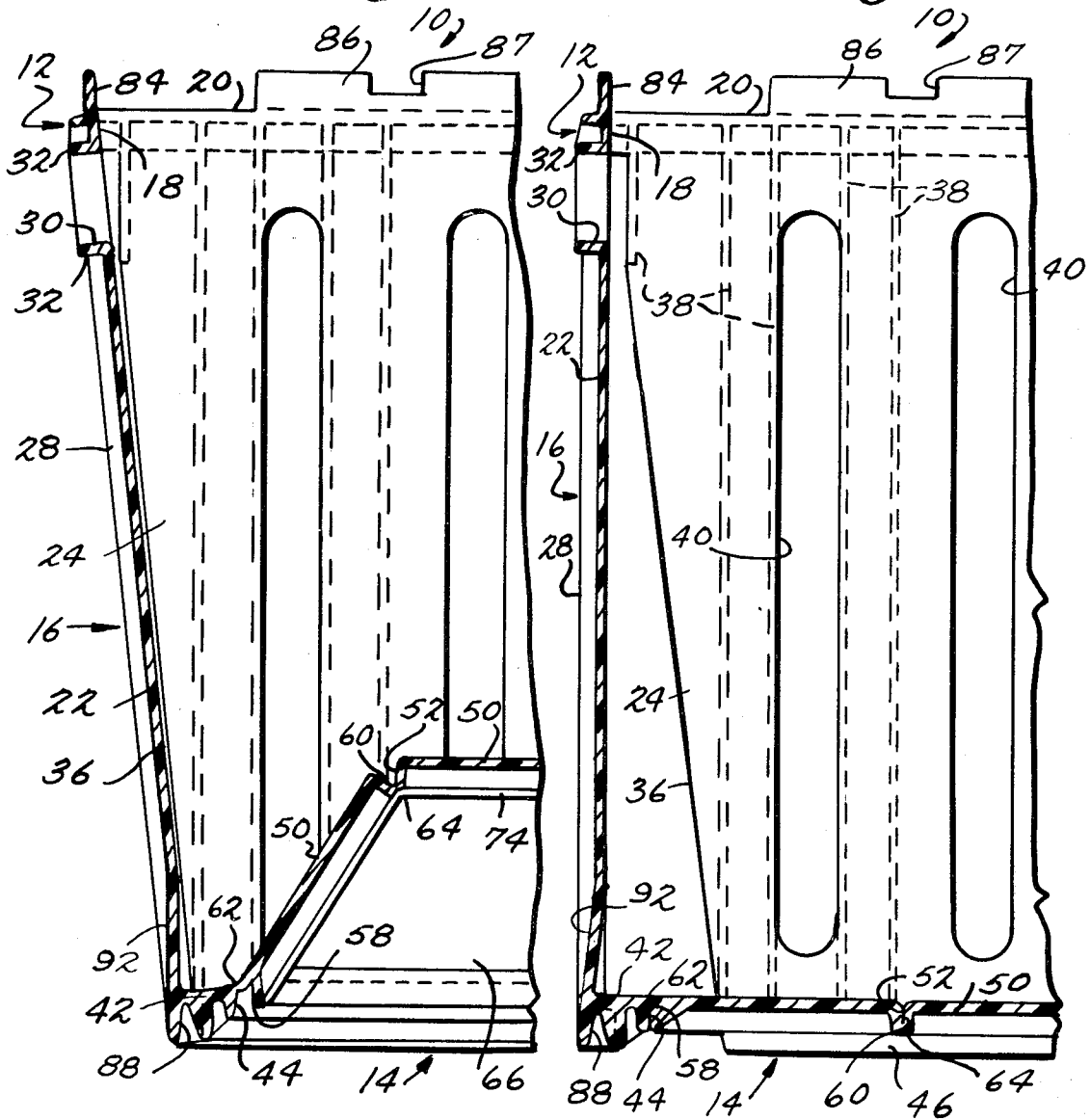
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Fig. 6.

Fig. 5.



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STACKABLE AND NESTABLE CONTAINER

This invention relates to containers and more particularly to a container having a bottom structure and side walls which are movable with respect to a rigid peripheral top structure between stacking and nesting positions.

There are many instances where individual articles are most conveniently transported in containers capable of receiving and supporting a number of such articles grouped for unitary manual handling at the destination where relatively immediate unloading from the transporting containers takes place. For example, eggs in cartons of the type sold in supermarkets are usually transported to the supermarket in crate containers. The crate containers are usually loaded in vertical stacks within a truck for transportation to the supermarket and the crate containers are unloaded at the destination and then the individual cartons are removed from the crates. When dealing with a product such as eggs in cartons, it is preferable that the container be of rigid construction. The cost of rigid containers precludes a throwaway use as is the case with cardboard containers. Where containers must be re-used it is, of course, necessary that they be stored in the supermarket after being emptied and then returned to the poultry house for re-use. Conventional wooden crates are sometimes used. These crates permit a maximum transportation load from the poultry house to the supermarket, however, they present a storage and return space problem because they are incapable of being stored and transported empty in nested relation. Rigid containers having sloping side walls which permit the nesting relation for better storage and empty transportation conversely suffer from a disadvantage in the loaded transportation function because of the dead space in the load resulting from the slanted walls of the containers.

It is an object of the present invention to provide a container which achieves the advantages of conventional wooden crates insofar as maximum filled transportation loads are concerned, while at the same time obtaining the advantages of convenient storage and empty transportation of nestable containers.

Another object of the present invention is the provision of a stackable and nestable container of the type described which is capable of being formed of a moldable material such as plastic or the like in one-piece relatively rigid construction.

Another object of the present invention is the provision of a stackable and nestable container of the type described including a generally horizontally extending rigid peripheral structure having a plurality of sides defining an open top area of fixed dimensions, a bottom structure and a plurality of side walls interconnecting the bottom structure and the rigid peripheral structure in such a way as to permit the bottom structure and side walls to move between stacking and nesting positions without detrimentally affecting the structural integrity of the peripheral top structure.

Another object of the present invention is the provision of a stackable and nestable container of the type described which can be moved between its stacking and nesting positions in simple fashion.

Another object of the present invention is the provision of a stackable and nestable container of the type

described in which the bottom structure and side walls are self-biased to be retained in both the stacking position and the nesting position.

Still another object of the present invention is the provision of a stackable container having sides of a length approximately twice the length of the ends and improved upper and lower stacking element means permitting said container to be mounted in vertically stacked relation with a similar container disposed thereabove or therebelow in any one of the following formations: (1) with the sides and ends thereof in vertical alignment with the sides and ends of the container, irrespective of end-to-end orientation and adjacent upper and lower stacking elements interengaged, or (2) with either half of said container vertically aligned with either half of a vertically adjacent container and the other half of said container extending horizontally outwardly from said vertically adjacent container beyond either end thereof or either half of either side thereof and with the adjacent upper and lower stacking elements interengaged.

Still another object of the present invention is the provision of a stackable and nestable container of the type described which is simple in construction and operation, economical to manufacture and durable in operation.

These and other objects of the present invention will become more apparent during the course of the following detailed description and appended claims.

The invention may best be understood with reference to the drawings wherein an illustrative embodiment is shown.

In the drawings:

FIG. 1 is a top plan view of a stackable and nestable container embodying the principles of the present invention showing the same in its stacking position;

FIG. 2 is a fragmentary bottom view of the container showing the same in its nesting position;

FIG. 3 is a fragmentary sectional view taken along the line 3—3 of FIG. 1;

FIG. 4 is a fragmentary sectional view taken along the line 4—4 of FIG. 2;

FIG. 5 is a fragmentary sectional view taken along the line 5—5 of FIG. 1;

FIG. 6 is a fragmentary sectional view taken along the line 6—6 of FIG. 2;

FIG. 7 is an enlarged fragmentary sectional view taken along the line 7—7 of FIG. 1, illustrating one stacking relation of two like containers embodying the principles of the present invention;

FIG. 8 is an enlarged fragmentary sectional view illustrating the nesting relationship between two like containers embodying the principles of the present invention at a position thereon corresponding generally to the position indicated at 8—8 in FIG. 1; and

FIG. 9 is an enlarged fragmentary sectional view illustrating the nesting relationship between two like containers embodying the principles of the present invention at a position thereon corresponding generally to the position indicated at 7—7 in FIG. 1.

Referring now more particularly to the drawings, there is shown therein a stackable and nestable container, generally indicated at 10, embodying the principles of the present invention. In general, the container 10 includes a generally horizontally extending rigid

peripheral structure, generally indicated at 12, a bottom structure, generally indicated at 14, and a plurality of side wall structures, generally indicated at 16, interconnected between the peripheral structure 12 and the bottom structure 14. The essential characteristic of the container of the present invention is that the peripheral structure 12 is an integral relatively rigid structure providing structural integrity to the container where most needed, and the bottom and side wall structures 14 and 16 are movable between a stacking position in which the side wall structures extend vertically downwardly from the peripheral structure and the bottom structure extends generally horizontally inwardly from the side wall structures so that a plurality of like containers can be stacked one on top of the other, as shown in FIG. 7, and a nesting position in which the side wall structures extend downwardly and inwardly from the peripheral structure permitting a plurality of like containers to be nested one within the other, as shown in FIGS. 8 and 9.

The preferred embodiment of the container 10 shown in the drawings is formed of a moldable plastic material in a one-piece construction, the specific material of the preferred embodiment being polypropylene. In accordance with conventional molding procedures, the component structures of the container 10 are formed of ribbed thin wall sections for the purpose of obtaining maximum strength with a minimum of material. The peripheral top structure is formed with four sides including two parallel short sides 18 and two parallel long sides 20, all of which are integrally interconnected to form a relatively rigid structure. As shown, the entire peripheral structure is of generally inverted U-shaped configuration in cross-section except at the central portion of the sides 18 where the cross-sectional configuration is modified to accommodate hand openings, in a manner hereinafter more fully described.

The side wall structure 16 of the preferred embodiment includes a pair of spaced relatively short side walls or end walls 22 and a pair of spaced relatively long side walls 24. The side walls 22 are of identical construction, each being integral at its upper end portion with an associated side 18 of the peripheral structure 12. The particular construction of each side wall shown is in the form of a rectangular panel having opposite lower corner portions removed therefrom as indicated at 26, the upper edge of the panel being integral with the inner flange of the U-shaped section forming the side of the peripheral structure. Formed integrally on the outer surface of each side wall is a plurality of horizontally spaced vertically extending ribs 28. As previously indicated, each side wall 22 is formed adjacent its central upper end portion with a hand opening 30 of generally rectangular configuration, the vertical surfaces of which are defined by a pair of relatively short ribs 28 and the horizontal surfaces of which are defined by a pair of horizontally extending ribs 32. In this regard, it will be noted that the upper horizontal rib 32 forms a part of the peripheral structure 12 which replaces the outer leg of the U-shaped cross-sectional configuration previously described. As shown, the horizontal rib 32 and associated right portion of the peripheral structure are strengthened by suitable webs, cross ribs or the like. The portion of the side wall

defined by the vertical ribs 28 preferably have vertically elongated openings 34 formed therein which serve to minimize material without sacrificing strength.

Except for the hand openings 30, the long side walls 24 preferably embody a structure essentially the same as the side walls 22. Thus, each side wall 24 includes cut-off corners 36, vertically extending ribs 38 and vertically elongated openings 40.

The bottom structure 14 is made up of a plurality of relatively movable portions including a first pair of marginal portions 42, each of which is integrally united with the lower end portion of an associated side wall 22; as shown, each marginal portion 42 extends generally perpendicularly inwardly from the associated side wall and terminates in an inner edge structure indicated at 44. A second pair of similar marginal portions 46 is integrally united with the lower end portions of the side walls 24 and provides similar inner edge structures 48. The bottom structure 14 also includes a central portion 50 providing opposed parallel pairs of outer edge structures 52 and 54 disposed in parallel relation to the edge structures 44 and 48 respectively.

Extending between each pair of corresponding edge structures 44 and 52 is a connecting portion 56 providing an outer edge structure 58 of a size complementary to the adjacent inner edge structure 44 and an inner edge structure 60 of a size complementary with the adjacent outer edge structure 52. Each connecting portion 56 is hingedly or pivotally connected with an associated marginal portion 42 for pivotal movement about an axis extending along the upper surfaces of the associated edge portions 44 and 58. In the preferred embodiment this pivotal interconnection is effected by an integral web of plastic material, indicated at 62. Each connecting portion 56 is hingedly or pivotally connected to the central portion 50 for movement about an axis extending along the lower surfaces of the adjacent edge structure 52 and 60. Here again, in the preferred embodiment shown the hinge connection is formed by an integral web of plastic material, indicated at 64. While integral hinges are preferred, the invention contemplates the utilization of other types of hinges such as piano hinges and the like.

A second pair of connecting portions 66, similar in nature to the connecting portions 56, is associated with and hingedly connected between the parallel end edges 48 and 54. Thus, each connecting portion 66 includes an outer edge structure 68, an inner edge structure 70, an outer integral hinging web portion 72 and an inner integral hinging web portion 74.

It can thus be seen that the bottom structure 14 is integrally connected with the lower end portions of the side walls 22 and 24 and includes a plurality of portions which are movable relative to each other with the side walls between a stacking position, as illustrated in FIGS. 1, 3 and 5, and a nesting position, as shown in FIGS. 2, 4 and 6. Where the container is molded of one-piece construction, as with the preferred embodiment, the formation of the container 10 within the mold is with the side walls and bottom structure disposed in the nesting position. The formation of the container in this position insures that the container will be self-biased to remain in this position through the well-known phenomena commonly referred to as plastic memory.

The container 10 is moved out of the nesting position into the stacking position by manually pressing downward on the central portion of the bottom structure or by gripping the container through the hand holes 30 and giving the container a short, jerking movement downwardly. The essential functional characteristic of the edge structures of the various bottom portions is to provide stop surfaces which interengage when the bottom structure is in its stacking position and to prevent movement of the bottom structure in a direction toward the stacking position to a position beyond the stacking position. The edge structure may take different forms so long as the stop function is provided. As shown, all of the edge structures except the outer edge structures 58 and 68 of the connecting portions 56 and 66, are in the form of continuous downwardly extending flanges, strengthened in appropriate space locations by generally coextensive strengthening ribs. The edge structures 58 and 68 are formed by the outer edge of angularly dependent flanges strengthened by a plurality of spaced strengthening ribs. The angular inclination of the edge structures with respect to the upper planar surfaces of the associated bottom portions is such that cooperating edge structures when in abutting engagement in the stacking position defined include angles with the upper planar surfaces which are slightly more than a total of 180°.

The rigidity of the bottom structure 14 in the stacking position is further aided by forming each connecting portion 56 with an inner end edge structure 76 and an angularly related outer end edge structure 78. The connecting portions 66 are formed with corresponding inner end edge structures 80 and outer end edge structures 82. As best shown in FIG. 1, the inner end edge structures 76 and 80 of each pair of adjacent connecting portions are disposed in interengagement when the container is in its stacking position with the outer end edge structures 78 and 82 of each pair of adjacent connecting portions diverging outwardly therefrom. These latter edge structures are adapted to interengage to limit the movement of the container in the direction toward its nesting position. It will be understood that each pair of cooperating outer end edge structures 78 and 82 are spaced apart slightly in the molded nesting position to permit the formation. It will also be noted that the end edges of the marginal portions 42 and 46 are disposed in alignment with the respective edges 78 and 82.

It will be noted that due to the interconnection between the bottom structure 14 and the lower end portions of the side walls 22 and 24 as the bottom structure is moved from the nesting position wherein the relatively movable portions thereof are disposed in upwardly convex-concave relationship (FIGS. 4 and 6) to the stacking position wherein they are disposed generally horizontally (FIGS. 3 and 5), the side walls 22 and 24 will be moved from a nesting position wherein they extend downwardly and inwardly, as shown in FIGS. 4 and 6, into a stacking position wherein they extend vertically downwardly, as shown in FIGS. 3 and 5. The movement of the side walls is thus essentially a pivotal or swinging movement of the lower end portions about an axis extending along the associated side of the peripheral structure. The

memory of the plastic material to return to the position in which it was molded, plus the tortional spring effect provided by the rigid nature of the peripheral structure including the integrally connected corners thereof, provides a bias tending to move the side walls inwardly toward the nesting position when disposed outwardly in the stacking position. Because of the aforesaid relationship of the stop surfaces provided by the edge structures of the bottom portions (i.e., slightly more than a total of 180°), the inward bias of the side walls urges the bottom structure 14 in a direction to cause interengagement of the stop surfaces and hence to maintain the bottom structure in its stacking position without the necessity of a load on the bottom structure. In short, the arrangement is such that once the container is moved into its stacking position, while empty, it is self-biased to remain in that position. The tortional bias provided by the rigid peripheral structure is sufficiently great to overcome the plastic memory bias of the bottom structure to move toward its nesting position. When the container is moved from its stacking position in a direction toward its nesting position, the over-center relationship is substantially immediately reversed and all biasing forces will then tend to move the container into its nesting position.

The arrangement is such that a container 10 supported by itself in the nested position will be moved into its stacked position in response to the movement of articles into the container into supporting relation to the central portion of the bottom structure. A relationship of this type can be beneficial in handling fragile or easily damaged articles, since the bottom structure in its nested position is disposed vertically closer to the open top of the container and due to the biasing effect previously described, is essentially resiliently held in such elevated position so as to be lowered in response to the accumulation of fragile articles loaded therein. This function is achieved by the preferred embodiment, although it will be understood that variations in the bottom structure can be made within the basic principles of the present invention without providing this added function. For example, the bottom structure could be formed by inwardly extending portions rigid with the lower end of each side wall movable radially inwardly and outwardly by any suitable means such as a rotary cam or the like. Moreover, the open nature of the side walls can be eliminated where a closed container is desired with the corners being closed by flexible material. The principles of the present invention are readily applicable to three sided containers as well as containers having more than four sides. Where the container is to be used as a stackable and nestable bin element, the peripheral structure may include one more side than the number of side wall structures.

In order to aid in the stacking function when the container is disposed in its stacking position, there is provided stacking means which, as shown, includes a stacking element 84, in the form of an integral upwardly extending horizontally elongated projection, disposed centrally on the upper surface of each side 18 of the peripheral structure 12. In the preferred embodiment shown, the short sides 18 of the peripheral structures have a width substantially equal to one-half the width of the long sides 20. With this preferred arrangement, each long side 20 of the peripheral structure has

formed integrally thereon a pair of upstanding stacking elements 82, each stacking element 86 being positioned centrally within one half of the long side of the peripheral structure.

Referring now more particularly to FIGS. 2 and 7, the stacking means of the present invention preferably includes cooperating lower stacking elements provided in the bottom structure in the form of sockets 88 and 90 of a shape to receive the projections forming the upper stacking elements 84 and 86. These stacking element sockets may be provided in any desirable construction and, as shown, are constructed by forming the bottom surface of the marginal portions 42 and 46 with a pair of spaced flanges interconnected by webs and having strengthening ribs formed thereon.

It will be noted that in order for the stacking element sockets 88 and 90 to be disposed in a position of vertical alignment with the projections 84 and 86, the panel forming each side wall is flared outwardly adjacent its lower end portion as best indicated at 92 and 94, FIGS. 3-6. These flared portions are disposed substantially vertically when the container is molded.

With the preferred stacking means construction shown and described it will be noted that the container 10 is capable of being mounted in vertically stacked relation with respect to a container 10 of like construction disposed thereabove or therebelow in the stack formation in any one of the following formations: (1) with the sides and ends thereof in vertical alignment with the sides and ends of the other container, irrespective of end-to-end orientation and adjacent upper and lower stacking elements interengaged, or (a) with either half of said container vertically aligned with either half of a vertically adjacent container and the other half of said container extending horizontally outwardly from said vertically adjacent container beyond either end thereof or either half of either side thereof and with the adjacent upper and lower stacking elements interengaged.

It will be noted that in the second relationship set forth above, one of the stacking projections of the lowermost container in the stack formation will extend across the lower central area of the bottom structure 14 of the like container disposed thereabove. In order to prevent interference, each stacking element projection 84 is notched, as indicated at 85, at a position spaced vertically above the hinge element 74, the stacking element projections 86 being correspondingly notched, as indicated at 87.

The second relationship set forth above permits a wide variety of stable stacks of filled containers to be formed. These stack formations are characterized by horizontal layers containing a plurality of containers, one or more of the containers of each layer serving to interlock two containers of the adjacent layer. Specific examples of formations of this type include (1) horizontal layers formed of two side-by-side containers, the sides of each pair of containers in adjacent layers extending at right angles with respect to each other; (2) horizontal layers formed by two side-by-side containers and a third container in each layer having one side abutting two aligned ends of the side-by-side containers, the three containers in each layer being reversed with respect to the three containers in adjacent layers; (3) horizontal layers formed of four con-

tainers with adjacent layers including either a first pair of side-by-side containers disposed in end-to-end relation to a second pair of side-by-side containers, or a first pair of side-by-side containers and a container having one side abutting each of the two pairs of aligned ends.

It will be understood that the above principles of the present invention relating to the stacking element construction are not limited in their applicability to containers embodying the principles of the present invention relating to the movement of the side walls and bottom structure between stacking and nesting positions. The preferred container 10 described above and illustrated in the drawings embodies all of these principles. The stacking principles are applicable to other types of containers as well.

It will also be understood that the particular construction of the stacking means is subject to wide variation. For example, the container itself may include lower stacking means only formed to cooperate with stacking means provided on a separate lid or cover for the open top of the container.

The container 10 of the present invention is also provided with nesting stop means for preventing two or more containers nested one within the other from becoming wedged into nesting relation. In the preferred embodiment shown the upper surfaces of the upper stacking elements 84 and 86 provide upwardly facing nesting stop surfaces provided by the stacking elements 84 and are adapted to engage downwardly facing surfaces 96 provided by the lower ribs 38, as shown in FIG. 8, while the upwardly facing nesting stop surfaces provided by the stacking elements 86 are adapted to engage downwardly facing surfaces 98 provided by outward extensions of the vertical ribs 38.

It thus will be seen that the objects of this invention have been fully and effectively accomplished. It will be realized, however, that the foregoing preferred specific embodiment has been shown and described for the purpose of illustrating the functional and structural principles of this invention and is subject to change without departure from such principles. Therefore, this invention includes all modifications encompassed within the spirit and scope of the following claims.

I claim:

1. A stackable and nestable container comprising a generally horizontally extending rigid peripheral structure having a plurality of sides defining an open top area of fixed dimensions, a plurality of side walls, each having an upper end portion and a lower end portion, each of said side walls being connected at its upper end portion with an associated side of said peripheral structure for movement between a stacking position wherein said side wall extends generally vertically downwardly from the associated side of said peripheral structure and a nesting position wherein said side wall extends generally downwardly and inwardly from the associated side of said peripheral structure, a bottom structure having portions movable relative to each other between a stacking position wherein said portions extend in a generally horizontal plane within an area generally equal to said open top area and a nesting position wherein the horizontal extent of said bottom structure portions is within an area having corresponding dimensions less than the fixed dimensions of said

open top area, said bottom structure being connected with the lower edge portions of said side walls for simultaneous movement of said side walls and said bottom structure between said stacking and nesting positions, stacking means for stabilizing a plurality of like containers in vertically stacked formation with the side walls of each container and the bottom structures interconnected with the lower edge portions thereof disposed in their stacking positions, and complementarily vertically spaced nesting stop surface means for preventing wedged interengagement of a plurality of like containers in nested formation with the side walls of each container and the bottom structure interconnected with the lower end portions thereof disposed in their nesting positions.

2. A stackable and nestable container as defined in claim 1 wherein each of said side walls is rigidly connected at its upper end portion with the associated side of said peripheral structure for resiliently biased movement toward said nesting position.

3. A stackable and nestable container as defined in claim 2 wherein each of said side walls is of apertured and ribbed thin wall construction having free side edges which extend generally downwardly and inwardly.

4. A stackable and nestable container as defined in claim 1 wherein said bottom structure includes a marginal portion rigidly connected with the lower end portion of each side wall and extending inwardly therefrom, each of said marginal portions having an inner side edge structure, a generally horizontally extending rigid central portion having a plurality of outer side edge structures corresponding in number to the number of sides of said peripheral structure and defining an area of lesser dimensions than the fixed dimensions of said open top area, a plurality of rigid connecting portions corresponding in number to the number of side walls, each of said connecting portions having inner and outer side edge structures, and means hingedly interconnecting each of said connecting portions to an associated marginal portion and to said central portion operable to position each of said connecting portions (1) in generally horizontally inwardly extending relation when said bottom structure is disposed in said stacking position with the outer side edge structure thereof abutting the inner side edge structure of the associated marginal portion and the outer side edge structure thereof abutting an associated outer side edge structure of said central portion and (2) in inwardly and upwardly extending relation when said bottom structure is disposed in said nesting position with the outer side edge structure thereof spaced from the inner side edge structure of the associated marginal portion and the outer side edge structure thereof spaced from the associated outer side edge structure of said central portion.

5. A stackable and nestable container as defined in claim 4 wherein said container is molded of plastic material in a one-piece integral construction with said side walls and said bottom structure disposed substantially in said nesting position.

6. A stackable and nestable container as defined in claim 5 wherein said plastic material is polypropylene.

7. A stackable and nestable container as defined in claim 1 wherein said stacking means includes stacking projections extending upwardly from said peripheral

structure and stacking recesses complementary to said stacking projections formed within the periphery of said bottom structure.

8. A stackable and nestable container as defined in claim 1 wherein said peripheral structure includes a first pair of sides disposed parallel with respect to each other and a second pair of sides disposed parallel with respect to each other and having a length generally twice the length of said first pair of sides, said stacking means including a first set of stacking projections extending upwardly from said first pair of sides between the ends thereof, a second set of stacking projections complementary to said first set extending upwardly from said second pair of sides at positions within one half the length thereof corresponding with the positions of said first set of stacking projections on said first pair of sides, a third set of stacking projections complementary to said first set extending upwardly from said second pair of sides at positions within the opposite half of the lengths thereof corresponding with the positions of said first set of stacking projections on said first pair of sides, and a plurality of complementary recesses formed in the periphery of said bottom structure at positions corresponding to all of said stacking projections so as to permit said container to be mounted in vertically stacked relation to a like container disposed thereabove or therebelow in any one of the following vertically stacked formations: (1) with the sides and ends thereof in vertical alignment with the sides and ends of the other container, irrespective of end-to-end orientation and adjacent upper and lower stacking elements interengaged, or (2) with either half of said container vertically aligned with either half of a vertically adjacent container and the other half of said container extending horizontally outwardly from said vertically adjacent container beyond either end thereof or either half of either side thereof and with the adjacent upper and lower stacking elements interengaged.

9. A stackable and nestable container as defined in claim 1 wherein said bottom structure includes a marginal portion rigidly connected with the lower end portion of each of said side walls and extending inwardly therefrom, each of said marginal portions having an inner side edge structure, a generally horizontally extending rigid central portion having a plurality of outer side edge structures corresponding in number to the number of sides of said peripheral structure and defining an area of lesser dimensions than the fixed dimensions of said open top area, a plurality of rigid connecting portions corresponding in number to the number of side walls, each of said connecting portions having inner and outer side edge structures, and means hingedly interconnecting each of said connecting portions to an associated marginal portion and to said central portion operable to position each of said connecting portions (1) in inwardly and slightly downwardly extending relation when said bottom structure is disposed in said stacking position with the outer side edge structure thereof abutting the inner side edge structure of the associated marginal portion and the outer side edge structure thereof abutting an associated outer side edge structure of said central portion and (2) in inwardly and upwardly extending relation when said bottom structure is disposed in said nesting position with the outer side edge structure thereof spaced from the inner

side edge structure of the associated marginal portion and the outer side edge structure thereof spaced from the associated outer side edge structure of said central portion, each of said side walls being rigidly connected at its upper end portion with the associated side of said peripheral structure for resiliently biased movement toward said nesting position so that such biased movement functions to yieldably maintain said bottom structure in both said stacking position and said nesting position.

10. A stackable and nestable container as defined in claim 9 wherein said connecting portions include inner and outer end edge structures, adjacent inner end edge structures of adjacent connecting portions interengaging when said bottom structure is disposed in said stacking position and adjacent outer end edge structures of adjacent connecting portions interengaging when said bottom structure is disposed in said nesting position.

11. A stackable container comprising bottom, side and top structures defining an interior containing space of generally rectangular configuration in plan bounded by a pair of parallel ends and a pair of parallel sides having a length approximately twice the length of said ends, stacking means for enabling said container to be mounted in vertically stacked relation with a similar container disposed thereabove or therebelow in any one of the following formations: (1) with the sides and ends thereof in vertical alignment with the sides and ends of the other container, irrespective of end-to-end

orientation and adjacent upper and lower stacking elements interengaged, or (2) with either half of said container vertically aligned with either half of a vertically adjacent container and the other half of said container extending horizontally outwardly from said vertically adjacent container beyond either end thereof or either half of either side thereof and with the adjacent upper and lower stacking elements interengaged, said stacking means comprising a first set of complementary upper and lower stacking elements along the upper and lower surfaces thereof adjacent each end of said container, a second set of complementary upper and lower stacking elements along the upper and lower surfaces thereof at positions within one half of the length of the sides of said container corresponding with the positions of said first set of stacking elements on the ends of said containers, and a third set of complementary upper and lower stacking elements along the upper and lower surfaces thereof at positions within the opposite half of the sides of said container corresponding with the positions of said first set of stacking elements on the ends of said container.

12. A stackable container as defined in claim 11 wherein each of said upper stacking elements comprises a horizontally elongated projection extending upwardly from the adjacent upper surface of the container and wherein each of said lower stacking elements comprises a horizontally elongated recess formed in the adjacent lower surface of said container.

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